

FCC RF EXPOSURE REPORT

FCC ID: 2AFZZR4A

Project No. : 2101C239
Equipment : Mi Router 4A Gigabit Edition
Brand Name : MI
Test Model : R4A
Series Model : N/A
Applicant : Xiaomi Communications Co.,Ltd
Address : #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China
Manufacturer : Xiaomi Communications Co.,Ltd
Address : #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China
Factory : Huizhou MTN WEIYE Technology Development Co.,Ltd
Address : No.2 Huitai Road,Huinan High-tech Industrial Park,Huiao Avenue,Huizhou City,Guangdong Province,China. 516000
Date of Receipt : Jan. 28, 2021
Date of Test : Feb. 25, 2021 ~ Mar. 17, 2021
Issued Date : Apr. 09, 2021
Report Version : R01
Test Sample : Engineering Sample No.: DG2021012799
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



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Certificate #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue	Apr. 01, 2021
R01	Updated the description in page 3 and page 4.	Apr. 09, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$$

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Table for Filed Antenna:

For 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	South star	MTO-WRM43	Dipole	N/A	5.99
2	South star	MTO-WRM43	Dipole	N/A	6.03

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+\dots+10^{GN/20})^2/N]$ dBi, that is Directional gain= $10\log[(10^{5.99/20}+10^{6.03/20})^2/2]$ dBi =9.02.
- 2) The antenna gain is provided by the manufacturer.
- 3) IEEE 802.11b is found to be the worst case and calculated.

Table for Antenna Configuration:

Operating Mode	TX Mode	1TX	2TX
		IEEE 802.11b	V (Ant. 1)
IEEE 802.11g		V (Ant. 1)	-
IEEE 802.11n(HT20)		-	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)		-	V (Ant. 1+Ant. 2)

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	South star	MTO-WRM43	Dipole	N/A	5.16	UNII-1
2	South star	MTO-WRM43	Dipole	N/A	5.35	
1	South star	MTO-WRM43	Dipole	N/A	5.44	UNII-3
2	South star	MTO-WRM43	Dipole	N/A	5.73	

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, Directional
 $\text{gain} = 10 \log \left[\frac{(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2}{N} \right]$ dBi, that is UNII-1 Directional
 $\text{gain} = 10 \log \left[\frac{(10^{5.16/20} + 10^{5.35/20})^2}{2} \right]$ dBi = 8.27, UNII-3 Directional gain = $10 \log \left[\frac{(10^{5.44/20} + 10^{5.73/20})^2}{2} \right]$ dBi = 8.60.
- 2) The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:

Operating Mode	TX Mode	1TX	2TX
		IEEE 802.11a	V (Ant. 2)
IEEE 802.11n(HT20)	-	-	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)	-	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT20)	-	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT40)	-	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT80)	-	-	V (Ant. 1+Ant. 2)

3. TEST RESULTS

For 2.4GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Average Output Power (dBm)	Max. Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.99	3.9719	24.52	283.1392	0.22385	1	Complies

For 5GHz UNII-1:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
8.27	6.7143	24.28	267.9168	0.35806	1	Complies

For 5GHz UNII-3:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
8.60	7.2444	24.19	262.4219	0.37840	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4GHz	5GHz			
0.22385	0.37840	0.60225	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report